

REMARKS

The present invention is a method of recovering location information of a subscriber in a mobile network and a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method of recovering location information of a subscriber in a mobile network. The invention provides protection against the loss of a Transport Address (TA) which is a current Care of Address of a mobile Subscriber from loss. See paragraph [0005] of the Substitute Specification. The TA is defined as the Care of Address which is an IP address associated with a mobile node while the subscriber is visiting a particular foreign link. See paragraph [0021] of the Substitute Specification.

Claims 15, 19, 21 and 25 stand rejected under 35 U.S.C. 102 as being anticipated by the 3GPP Publication 3G TR 23,821 V1.0.1 Release 2000-07 (hereinafter the publication). The Examiner reasons as follows:

Regarding claims 15 and 21, the 3GPP (3G TR 23.821 V1.0.1 Release 2000-07) teaches a method of recovering location information of a subscriber in a mobile network (see page 13, lines 16-19), the method comprising: upon a Serving-Call State Control Function (S-CSCF) receiving a call setup request for the subscriber from Interrogating - Call State Control Function (I-CSCF) (see page 53, Fig.B.3, V1), forwarding a route request to a User Mobility Server (UMS) (see page 53, Fig.B.3, V6) and receiving a home address of the subscriber (see page 53, Fig.B.3, V5), forwarding the call setup request from the S-CSCF to a home agent at the home address of the subscriber (see page 53, Fig.B.3, V8), forwarding the call setup request from the home agent to the subscriber (see page 53, Fig.B.3, VII), and forwarding an address update from the subscriber to the S-CSCF (see page 53, Fig.B.3, V7).

Regarding claims 19 and 25, the 3GPP (3G TR 23.821 V1.0.1 Release 2000-07) teaches a method of recovering location information of a subscriber in a mobile network (see page 13, lines 16-19), the method comprising: upon an Interrogating-Call

State Control Function (I-CSCF) receiving a call setup request for the subscriber (see page 53, Fig.B.3, V1), forwarding a route request to a User Mobility Server (UMS) (see page 53, Fig.B.3, V6) and receiving a home address of the subscriber (see page 53, Fig.B.3, V5), forwarding the call setup request from the I-CSCF to a home agent at the home address of the subscriber (see page 53, Fig.B.3, V8), forwarding the call setup request from the home agent to the subscriber (see page 53, Fig.B.3, VII), and forwarding an address update from the subscriber to the I-CSCF (see page 53, Fig.B.3, V8).

These grounds of rejection are traversed for the following reasons.

Each of independent claims 15, 19, 21 and 25 recite a method of recovering location information of a subscriber in a mobile network upon either a Serving-Call State Control Function (S-CSCF) or an Interrogating-Call State Control Function (I-CSCF) receiving a call set up request for the subscriber, the I-CSCF or the S-CSCF forwards a route request to a User Mobility Server (UMS) and receives a home address of the subscriber from the UMS followed by forwarding the call set up request from the S-CSCF or the I-CSCF to a home agent at the home address of the subscriber; forwarding the call set up request from the home agent to the subscriber; and forwarding an address update from the subscriber to the S-CSCF or the I-CSCF. The Examiner concludes that Fig. B.3 on page 53, entitled "Continuation of Registration - Serving CSCF and Visited Network" discloses each of the aforementioned steps. In this regard, the Examiner has construed step V6 between the S-CSCF and the hHSS as meeting the limitations involving the UMS. However, Fig. B.3 does not disclose a UMS. Step V6 is described on page 54 as a Cs-pull from the serving CSCF to the hHSS. Moreover, the description at the bottom of page 54 recites:

"Processing upon receipt: The HSS performs any necessary security checks, and then proceeds to provide the serving CSCF with the requested subscriber profile in information flow (V7). It may be that the information flow (V7) is not directly between the serving CSCF and HSS, but it might be via firewalls or proxies. This is FFS. The exact details of the subscriber profile is FFS."

There is no description in the publication involving steps V1-V8 of the claimed communications recited in each of the independent claims involving the UMS.

Moreover, the claimed forwarding of the call set up request from the S-CSCF of I-CSCF to a home agent at the home address of the subscriber also are not disclosed. In this regard, the Examiner relies upon step V8 which is a "OK 200" communication between the S-CSCF and the vi-CSCF as involving the home agent.

However, the description of communication V8 on page 55 does not describe anything pertaining to a home agent. In this regard, each of the claims either recites the forwarding of the call set up request from the S-CSCF or the I-CSCF to a home agent at the home address of the subscriber which cannot be met by step V8 which is a communication between the S-CSCF and vi-CSCF. Since the only two entities involved in the step "OK 200" communication V8 are between CSCF functions, the claimed home agent at the home address of the subscriber cannot be present.

As the Examiner is aware, the anticipation rejection requires the Examiner to demonstrate that every limitation of the claim which is rejected as being anticipated is either explicitly or inherently present in the anticipating reference. For the reasons set forth above, it is submitted that the publication does not anticipate the subject matter of independent claims 15, 18, 21 and 25 and the claims dependent therefrom which, more specifically, claim the subject matter defined in the independent claims.

Moreover, there is no basis in the record why a person of ordinary skill in the art would be led to modify the entities depicted in Fig. B3 on page 53 to be the entities recited in claims 15-28 except by impermissible hindsight.

Claims 1, 2, 4, 8, 9 and 12 stand rejected under 35 U.S.C. §102 as being unpatentable over U.S. Publication 2001/0031635 (Bharatia). These grounds of rejection are traversed for the following reasons.

Each of independent claims 1, 5, 8 and 12 recites a method of recovering location information of a subscriber in a mobile network comprising forwarding a registration request from the subscriber to a Serving-Call State Control Function (S-CSCF) including the subscriber's Transport Address (TA) which is a current care of address of the subscriber; forwarding a location update from the S-CSCF to a Home Subscriber Server (HSS) including the subscriber's TA and storing data including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the home network. The description of Fig. 3 pertains to a message flow diagram illustrating the attachment of a 3G (packet switched) application serviced by a 3G mobile terminal within a 3G (packet switched) network as stated briefly in paragraph [0030]. In more detail in paragraphs [0109] - [0116] the application registration procedure of the mobile terminal is described as attached/registered with the pre-G network according to the operation of Fig. 2. A registration request message is initially sent to a serving CSCF followed by the sequence of events described in paragraphs [0112] - [0116]. Nowhere in the description of Fig. 3 is there anything pertaining to the claimed forwarding of a registration request from the subscriber to a S-CSCF including the subscriber's TA which is a current care of address of the subscriber.

The Examiner alludes to paragraphs [0079] and [0081] with respect to claims 1, 8 and 9 and further with respect to claims 5 and 12 to paragraphs [0078], [0079] and [0081]. The description set forth in paragraphs [0078] thru [0081] describes the overall function of the Home Subscriber Service HSS 112 as being the master database for a given receiver. But while paragraph [0079] refers to address handling functions of the CSCF 110B and further the performing of temporary address handling for inter-network routing, there is nothing suggesting the claimed subject matter as recited in the independent claims involving a registration request complete the subscriber's TA, which is the current care of address of the subscriber, followed by forwarding a location update of the subscriber in the mobile network from the S-CSCF to a HSS including the subscriber's TA and in addition, as recited in independent claims 1 and 8, an address of the S-CSCF and storing data regarding the location update including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the mobile network as recited in independent claims 1, 5, 8 and 12.

Moreover, it is noted that the Examiner states that the teachings of Bharatia inherently teaches storing information so as to be protected against loss. However, the independent claims 1, 5, 8 and 12 recite "storing data regarding the location update including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the mobile network". To the extent that the HSS stores information, there is no disclosure that the HSS of Bharatia stores data regarding the location update including the subscriber's TA in the HSS so as to be protected against loss of the location information of the subscriber in the network. Therefore, even if it was obvious to a person of ordinary skill in the art to store data

in the HSS, it is submitted that Bharatia does not disclose storing data regarding the location update including the subscriber's TA in the S-CSCF. Moreover, the Examiner's reasoning that "thus [it] would [be] appreciated that the teaching of Bharatia could be modified such that storing data including the subscriber's TA and the S-CSCF without changing the scope of Bharatia's invention" is based upon impermissible hindsight.

Claim 9 further limits claim 8 in reciting, "that upon the S-CSCF losing data, lost data, including the subscriber's TA, may be restored to the SCSC from the data stored in the HSS." There is no teaching in Bharatia pertaining to the restoring of the subscriber's TA.

Claims 3, 4, 6, 7, 10, 11, 13 and 14 stand rejected under 35 U.S.C. §103 as being unpatentable over Bharatia and over United States Patent 6,136,532 (Tagushi et al). Tagushi et al have been cited as storing data in a non-volatile memory. However, Tagushi et al do not cure the deficiencies noted above with respect to Bharatia.

Claims 16, 22 and 26 stand rejected under 35 U.S.C. §103 as being unpatentable over the Publication in view of U.S. Publication 2002/0147845 (Sanchez-Herrero et al). Sanchez-Herrero et al have been cited as teaching forwarding the route request to the UMS comprising forwarding an indication to the UMS that the S-CSCF fails to have a care of address of the subscriber. The Examiner refers to paragraph [0047] of Sanchez-Herrero et al which does not refer at all to a UMS and states that the I-CSCF may forward a HSS address to a S-CSCF to simplify the S-CSCF behavior to find the HSS. However, this subject matter does not pertain to the UMS as recited in the independent claims. Accordingly, it is

submitted that the proposed combination would not render obvious the subject matter of claims 16, 22 and 26.

Claims 17, 20, 23 and 27 stand rejected as being obvious over the Publication in view of United States Patent 6,721,291 (Bergenwall et al). While Bergenwall et al do describe a home agent for encapsulating original data packets and choosing one prevailing care-of address 14, this teaching does not suggest the subject matter of the independent claims including the Call State Control Function entities and the USM as recited in independent claims 15, 19, 21 and 25. Accordingly, it is submitted that there is no basis in the record why a person of ordinary skill in the art would be motivated to make the combination of the Publication with Bergenwall et al and further if such combination were made, the subject matter of the rejected claims would not be achieved.

Claims 18, 24, and 28 stand rejected under 35 U.S.C. §103 as being unpatentable over the Sanchez-Herrero et al further in view of Bergenwall et al. The citation of Bergenwall et al has been discussed above with respect to the rejection of claims 17, 23, and 27. Bergenwall et al do not cure the deficiencies noted above with respect to the Publication and Sanchez-Herrero et al.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in fees due in connection with the

filings of this paper, including extension of time fees, to Deposit Account No. 01-2135
(0172.38738X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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Attachments

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